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# Modern Surgery - Chapter 33. Diseases and Injuries of the Lymphatics

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**XXXIII. DISEASES AND INJURIES OF THE LYMPHATICS.****Wounds, Ruptures, and Occlusions of the Left Thoracic Ducts.**

—It was long believed that wounds of the thoracic duct were almost certainly fatal. It is now known that they are rarely very dangerous unless the duct is divided close to the vein. A wound of the duct is rarely seen as the result of an accident because the adjacent vital structures are apt to be injured at the same time and death rapidly ensues. Wounds of the duct or of its large branches occasionally, but very rarely, are inflicted during surgical operations. In most cases the injury is not recognized at the time, but later, when white fluid escapes from the wound. The discharge may continue or may cease spontaneously. I assisted Dr. Keen in the case in which he did recognize the wound at the time it was inflicted. A thin fluid was observed flowing rhythmically from a tear in the duct. It is to be remembered that the course of the cervical part of the duct is very variable and sometimes the duct lies very high above the clavicle. There was 1 death in 17 recorded cases (Dudley P. Allen and C. E. Briggs, in "Amer. Med.," Sept. 21, 1901).

When the discharge from a cut duct continues to leak, constitutional effects will sooner or later become evident. In Schoff's case ("Wien. klin. Woch.," Nov. 28, 1901) it was not known that the duct had been injured until the stitches were removed. The wound was found distended with chyle and was packed with iodoform gauze. Fifteen days later the patient died from chylothorax and pulmonary compression.

Rupture of the thoracic duct or of the receptaculum chyli may occur from traumatism or be a secondary consequence of tuberculosis or carcinoma. Rupture leads to death by starvation, or to fatal compression by the exuded fluid (Harvey W. Cushing, in "Annals of Surgery," June, 1898). Occlusion of the main duct may be followed by rupture of the receptaculum chyli. Gradual occlusion by a tuberculous or inflammatory growth may not produce any serious symptoms. Cushing assumes that in such a case the lymph-current is reversed and is taken up by the right thoracic duct. In gradual obstruction masses of dilated lymph-vessels may be found, particularly in the thorax and abdomen. If lymph-vessels rupture, chyle flows out and, according to the situation, there arises "chylous ascites, chylothorax, chyluria, or chylous diarrhea" (Harvey W. Cushing, "Annals of Surgery," June, 1898).

**Treatment of Wounds.**—If the wound does not completely divide the duct and is discovered at the time of operation, suture the duct. Allen sutured the duct and had no further leakage. If the duct is divided, follow Cushing's advice: "It would seem advisable to place a provisional ligature about the duct on the proximal side of the wound, and to control the leakage, if possible, by a gauze tampon. This would act as a safety-valve, and allow chyle to escape, if the pressure in the duct became too great and there was difficulty in establishing a collateral lymphatic circulation. The patient meanwhile should be given a meager diet. If the leakage should become uncontrollable and threaten starvation, the provisional ligature should be tied, with the hope of a final readjustment of collateral circulation or trusting



in the presence of some anomalous anastomotic branch which might suffice to carry the lymph into the venous circulation" ("Annals of Surgery," June, 1898). When a wounded duct is leaking, the patient should be fed exclusively on proteids.

**Lymphangitis** is inflammation of lymphatic vessels. *Reticular lymphangitis*, which is inflammation of lymphatic radicles, is seen in some circumscribed inflammations of the skin. It is apt to attack the hands, causing redness and swelling, fading at the point of initial trouble while it spreads at the periphery; it is caused by micro-organisms derived from decomposing animal matter (Rosenbach). *Erysipelas* also causes it (see *Erysipelas*). *Tubular lymphangitis*, which is due to the entry into the lymphatic ducts of virulent micro-organisms or toxic materials, is seen after the infliction of dissecting-wounds, septic wounds, snake-bites, etc. It is announced by edema and by minute, hard, red streaks running from the wound up the extremity. Suppuration may occur.

**Infective lymphadenitis**, or inflammation of the glands, may follow lymphangitis or may be due to the deposition of infective material, the lymph-vessels not being inflamed. In septic lymphadenitis there are pain, tenderness, and swelling; in severe cases there is a chill and a septic fever. Suppuration may arise. The *treatment* is to drain and aseptinize the wound, to apply iodine, blue ointment, or ichthyol over the glands and vessels, and to employ rest and compression. Internally, milk punch, quinin, and nourishing diet are required. If the glands do not rapidly diminish in size after disinfection of a wound, and if they are in an accessible region, extirpate them. If suppuration of the glands occurs, incise and drain.

**Acute lymphadenitis**, or acute inflammation of the lymphatic glands, may be due to tubercle, syphilis, glanders, cold, or traumatism. Suppuration may or may not occur. In inflammatory lymphadenitis there are pain, heat, and nodular swelling. In severe cases there is fever.

The *treatment* is to aseptinize any area of infection, place the glands at rest, apply cold and ichthyol ointment, or inject into the gland every day 5 minims of a 3 per cent. solution of carbolic acid to prevent suppuration. If the glands do not rapidly shrink, extirpate them. If pus forms, evacuate it, drain, and aseptinize.

**Chronic lymphadenitis** is almost invariably syphilitic or tuberculous. It requires constitutional treatment and the local use of ichthyol, iodine, or blue ointment. If these remedies are not rapidly successful, tuberculous glands should be removed, but syphilitic glands will rarely require such radical treatment.

**Lymphangiectasis** (varicose lymphatics), or dilatation of the lymphatic vessels, is due to obstruction. It results, as a rule, from chronic lymphangitis or the pressure of a tumor, or blocking with filarial worms, and is most usually situated in the pubic, the inguinal, or the scrotal region, or on the inner side of the thigh. There are two forms: the *varicose*, in which the vessels have a tortuous outline, like varicose veins, but are covered only with surface epithelium; and *lymphatic warts* (lymphangioma circumscriptum), in which wart-like masses spring up, these masses being covered with epithelium and filled with lymph. In most cases of lymphangiectasis there is considerable hard edema. The diseased region has periodic attacks of pain and

redness, and usually at such times fever develops. Rupture of the dilated vessel causes a flow of lymph (*lymphorrhea*). Infection and erysipelas are apt to occur; it may be over and over again.

**Treatment.**—If the entire varix can be removed it should be extirpated. Maitland ("Brit. Med. Jour.," Jan. 25, 1902) shows that many varices are local and can be removed. If the varices are only partially removed lymphorrhea will probably develop.

**Lymphangioma** is an advanced stage of lymphangiectasis (page 260).

The **treatment** in mild cases is to pierce each vesicle with the negative pole of a galvanic battery and pass a current. In severe cases destroy the mass with the Paquelin cautery or excise it with a knife or with scissors.

**Elephantiasis.**—*True* elephantiasis (*elephantiasis Arabum*) is chronic hypertrophy of the skin and subcutaneous tissues following upon a lymphangiectasis produced by a nematode worm (the *filaria sanguinis hominis*).

*Spurious* elephantiasis is hypertrophy of the skin and subcutaneous tissue due to chronic inflammation (for instance, in a leg which possesses an ancient ulcer, or in the scrotum of a man with urinary fistula).

The **treatment** is massage and bandaging, sometimes ligation of the artery of supply, extirpation, or amputation.

**Tuberculous Glands.**—(See page 183.)

**Lymphadenoma** (*Malignant Lymphoma*; *Hodgkin's Disease*; *Pseudo-leukemia*).—The term lymphoma is used to loosely designate any persistent swelling of a lymphatic gland or glands. Lymphadenoma means a swelling of lymph-glands or lymphadenoid tissue, which swelling is progressive in character, involves group after group of glands, is associated with anemia, and often accompanied by secondary growths in the abdominal viscera. Fig. 514 exhibits a case of Hodgkin's disease.

This disease is most common in those under forty, and affects males far more frequently than females. In many cases the disease arises slowly in apparently healthy glands and exists for some time before it takes on signs of malignancy and invades distant glands. A gland enlarged from irritation or from tuberculous disease may become lymphadenomatous, and tubercle bacilli can sometimes be found in lymphadenomatous glands. Lazarus asserts that the disease is lymphosarcoma and the tuberculosis accidental. Musser, Sternberg, and others believe that tuberculosis is the disease. It is probable that Hodgkin's disease is a form of tuberculosis of the lymphatics. In some cases the disease has a tendency to generalization from the start; in others it appears to remain localized for many months.

**Symptoms.**—The glands in the neck are usually involved first, but the disease may begin in the axillary glands, the thoracic glands, or the intra-abdominal glands.

Two or more regions are sometimes involved simultaneously or almost simultaneously.

When the disease begins in the neck, it affects at first one side, and after many weeks or months the other side becomes involved. The glands are at first hard, separated from each other, movable, and the skin moves freely over them. Later the large glands weld together and form great masses upon both sides of the neck and in the axillæ which may obstruct respiration.

After a time a very large mass may soften, and in very rare cases the skin



becomes adherent and finally breaks. Intrathoracic symptoms point to involvement of the thoracic glands. It may be possible to palpate enlarged abdominal glands.

The spleen is enlarged; the thyroid may be enlarged; anemia is usually but not invariably present, and if it exists, there are the ordinary symptoms which go with it, viz., palpation, breathlessness, indigestion, vertigo, headache, pallor, and sometimes epistaxis. Occasionally, without obvious reason, the glands suddenly increase in size, or rapidly undergo a notable but temporary diminution.

Slight fever exists in almost all cases, and sometimes ague-like paroxysms

occur. During the existence of fever the glands usually increase rapidly in size.

**Diagnosis.**—In a widespread case the diagnosis is easy; in a localized case it is difficult. True tuberculous glands are most apt to first appear in the submaxillary triangle; lymphadenomatous glands, in the root of the neck or in the occipital triangle. Tuberculous adenitis is most common in children. As a rule, tuberculous glands caseate, but they may remain localized for years if caseation does not occur. The tuberculous glands usually soon become adherent and immovable. Lymphadenoma is most common after twenty, rarely re-

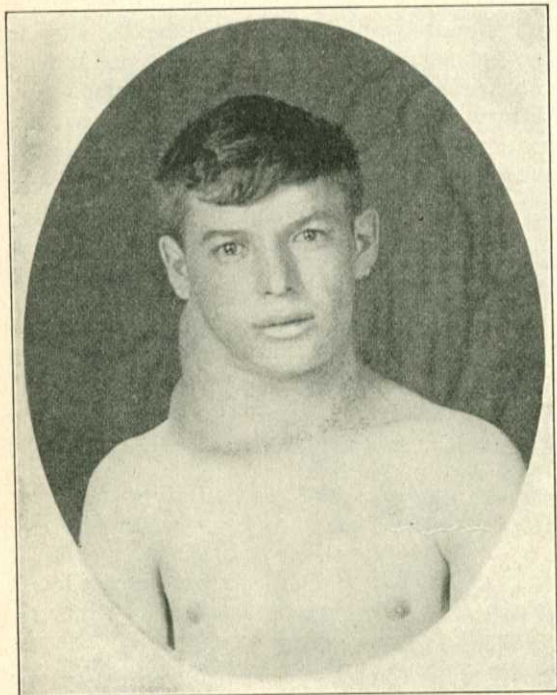


Fig. 514.—Hodgkin's disease.

main localized for more than a few months, rarely softens unless very large, and the glands are separated and movable until a huge mass forms. Early softening, prolonged limitation to one region, and absence of pronounced anemia in a person under twenty point to tubercle. In doubtful cases a gland should be removed for microscopical and bacteriological study.

**Prognosis.**—The disease is almost always, if not invariably, fatal. Most cases die within three years, some die within six months, some few live four or five years or more.

**Treatment.**—If the glands are localized to one side of the neck, or even to both sides of the neck, remove them. Early removal before dissemination has occurred may possibly save the patient. If early or radical removal is not possible, do not operate, but treat the patient with nutritious food, tonics, and courses of arsenic.